DEQ

Michigan Department of Environmental Quality, Waste and Hazardous Materials Division

CHECKLIST FOR ADMINISTRATIVE COMPLETENESS SOLID WASTE LANDFILL CONSTRUCTION PERMIT PACKET

This information is authorized under Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Failure to submit will result in the return of the application as administratively incomplete.

The information indicated on this checklist is necessary for a solid waste landfill construction permit application to be administratively complete pursuant to the administrative rules for Part 115.

Please complete and submit this "Checklist for Administrative Completeness" with the construction permit application. For Part A 1 - 12 - General Information, please indicate by checking in allotted space that you have included the information and in A - 13 indicate amount of enclosed check. For Parts B through J, please record in the allotted space the location of the documents in the construction permit packet where the required information can be found. To facilitate our review of the construction permit application, please complete this administrative completeness checklist in its entirety and enclose all of the requisite information.

All 'non-shaded' boxes (☐) require a response; 'dark-shaded' boxes (■) do not.

'Light-shaded' boxes (☐) may be used to record information but does not necessarily require a response.

	A. General information required to be submitted on the construction permit application provided. Rule 902(1)(a).
	1. Name and location of the facility.
	2. Name and address of the operation.
	3. Name and address of the property owner(s).
	4. Name and address of any mineral rights owner(s).
	5. The type of disposal area proposed.
	6. The type of application being submitted.
	7. A description of the type of waste proposed for disposal attached to application form.
	8. The number of acres applied for.
	9. The design capacity of the landfill.
	10. The signature of the owner and proposed operator.
	11. Facility map included with application form.
	12. Facility's legal description attached to application form.
$	13. Indicate the amount of the application fee **Rule 902(1)(b)**
	14. Verification of receipt of application fee from Cashier's Office.

Description of Item	Location of Documents
B. An environmental assessment must contain the following information. Rule 902(1)(c)	
1. Documentation of consistency with the county solid waste management plan through either of the methods allowed. **Rule 902(2)** and **Rule 903(1)(a)**	
a. Letter, resolution, or other document from designated planning agency that the proposed disposal area is consistent.	
b. Statement from applicant saying why they believe the proposed disposal area is consistent based on the requirements of the plan, if the designating planning agency refuses to provide the original documentation.	
2. A list of required governmental permits/licenses required for the disposal area. **Rule 903(1)(b)** and **903(2)(c)**	
3. Documentation of compliance with location standards specified in Rules 411-419 (for Type II) or Rules 305 and 310 (for Type III). **Rule 903(1)(c)**	
a. Rule 411 Groundwater Isolation	
b. Rule 412 Horizontal isolation	
c. Rule 413 Sensitive areas	
d. Rule 414 Airport safety	
e. Rule 415 Floodplains	
f. Rule 416 Wetlands	
g. Rule 417 Fault areas and impact zones	
h. Rule 418 Unstable areas	
i. Rule 419 Vertical expansions	
4. Demonstration of compliance with performance standards for surface water, groundwater, and air; specified in Rule 306 (for Type III) and Rule 436 (for Type II). **Rule 903(1)(d)**	
(a) surface water,	
(b) groundwater, and	
(c) air	

Description of Item	Location of Documents
5. A description of the proposed facility which includes “a. - e.” as follows: **Rule 903(2)(a)**	
a. Type and size of the disposal area.	
b. Public roads to be used to access the facility.	
c. Anticipated volume waste to be received per day.	
d. Anticipated counties to be served.	
e. Anticipated useful life of the facility.	
6. A description of the existing environment including: **Rule 903(2)(b)**	
a. Maps showing the existing topography, land use, and residences surrounding the facility.	
b. Existing air quality including a wind rose from the closest available station.	
c. Hydrology including the following from the nearest available station:	
(1) Magnitude of the 24-hour, 25-year	
(2) Average annual rainfall.	
d. Maximum floodplain elevation of surface waters proximate to the facility.	
e. List of all endangered or threatened species whose range falls within the property boundaries of the facility.	
f. List of historic or archaeological sites proximate to the property boundary.	
g. List of any known sites of environmental contamination.	
h. Identification of any significant public resources within or adjacent to the proposed facility.	
i. Identification of any airport within 10,000 feet of the facility.	
7. Statement of the anticipated environmental impacts in relation to each component of the existing environment (as described in B.6). **Rule 903(2)(d)**	

Description of Item	Location of Documents
8. A listing of alternative actions for waste disposal in the country or region, including alternatives considered positive and negative, economic, and environmental impacts of the alternatives, and the alternative of no action. **Rule 903(2)(e)**	
9. A summary statement of the unavoidable adverse impacts. **Rule 903(2)(f)**	
10. A statement of the protective and corrective measures that will be taken to reduce and mitigate adverse impacts to acceptable levels. **Rule 903(2)(g)**	
11. Graphic displays and references as follows: **Rule 903(3)**	
a. Maps that show the location of the proposed action, if applicable, with respect to communities or features that readily identifiable as locations in the state.	
b. Maps, diagrams, or photographs that illustrate the relationships of the disposal area to the environmental element being impacted.	
c. References to the literature or other sources of information from which data in the environmental impact statement is taken and upon which conclusions are based.	
C. A hydrogeological report that includes the following: Rule 902(1)(d)	
1. A determination of existing groundwater quality, including the area and vertical extent of any groundwater contamination. **Rule 904(1)(a)**	
2. Definition of the following aquifer: **Rule 904(1)(e)(i)-(iii)**	
a. The uppermost aquifer and aquifers that are hydraulically inter-connected to the uppermost aquifer beneath the facility property.	
b. Any aquifer that is utilized by Type I and Type II and public water supplies, as defined in R 325.10502, within 1,000 feet of the proposed active work area.	
c. Any aquifer that is utilized by Type IIb and Type III public water supplies, as define in R 325.10502, within 1,000 feet of the proposed active work area.	

Description of Item	Location of Documents
3. A determination of the background groundwater quality. **Rule 904(1)(b)** and **Rule 904(4)(a)**	
4. A map of the site and surrounding area, drawn to scale and showing "a. - g.": **Rule 904(4)(b)**	
a. Distance to existing wells and properties with the potential for groundwater supplies showing all soil borings within one-half mile, including all domestic municipal, industrial, oil, and gas wells for which copies of logs area available.	
b. Existing lakes or ponds.	
c. Streams, springs, or wetlands.	
d. Direction of surface drainage and groundwater movement in the area.	
e. Locations of borings, observation wells, and other well data used in the report.	
f. Topography, including predominant topographic features.	
g. Location of any known or potential sources of groundwater contaminants.	
5. Observation well records or soil borings to locate and identify aquifers beneath the property aquifers beneath the property identifying: **Rule 904(4)(c)**	
a. Depth to groundwater.	
b. Aquifer thickness.	
c. Vertical and horizontal groundwater flow directions.	
d. Vertical and horizontal flow rates.	
6. A groundwater elevation map, based on stabilized water level readings, contoured at not more than one foot, referenced to U.S. Geological Survey datum and including: **Rule 904(4)(d)**	
a. Groundwater flow directions and possible variations in groundwater flow directions.	
b. Depth of groundwater.	
7. An evaluation of site earth materials, including bedrock characteristics, if bedrock exists within 50 feet of the proposed base of fill, based on boring logs including: **Rule 904(4)(e)**	
a. Soil and rock descriptions.	
b. Methods of sampling.	

Description of Item	Location of Documents
c. Sample depths.	
d. Data of boring.	
e. Water level measurements at the time of the boring.	
f. Soil tests data.	
g. Boring locations.	
8. A series of geologic cross sections or fence diagrams that pass through representative borings, referenced to a site map that shows all wells and borings, and illustrating the following: **Rule 904(4)(f)**.	
a. Existing topography.	
b. Soil borings.	
c. Soil classification.	
d. Stratigraphy.	
e. Bedrock.	
f. Wells.	
g. Stabilized water level readings.	
h. Proposed site grades.	
9. The nature, extent and consequence of any mounding that results from diversion of infiltration and surface runoff during operation and post-closure. **Rule 904(4)(g)**	
10. A description of any proposed engineering modifications intended to modify groundwater level. **Rule 904(4)(h)**	
11. A determination of the horizontal and vertical flow system, and diagrams that illustrate horizontal and vertical flow directions of groundwater. **Rule 904(4)(i)**	
12. A compilation and interpretation of data, maps, and charts based on site conditions to support the conclusions and recommendations of the hydrogeological report. **Rule 904(4)(k)**	
D. The hydrogeological plan as required by R 299.4905. Rule 902(1)(e)	
1. A plan that includes monitoring of the following: **Rule 905(1)**	
a. The monitoring well system which is in compliance with R 299.4906.	

Description of Item	Location of Documents
b. The leachate and secondary collection system of the landfill, as specified in R 299.4432.	
c. Any surface water that may receive runoff from the active work area.	
2. The following specific information: **Rule 905(2)**	
a. The location to be sampled.	
b. A list of constituents to be sampled and the frequency of sampling.	
c. Identification of the sampling and analysis procedures to be used for each constituent or parameter proposed including:	
(1) Sample collection.	
(2) Sample preservation and shipment.	
(3) Analytical procedures including the method detection limit for the procedure specified.	
(4) Chain of custody control.	
(5) Laboratory and field Quality Assurance/Quality Control.	
(6) Procedures for preventing cross-contamination during well installation, purging, and sampling.	
d. Statistical procedures for evaluating data in compliance with R299.4908.	
E. Topographic maps that meet the following requirements: Rule 902(1)(f)	
1. Maps referenced to U.S. Geological Survey. datum at a scale of not more than 200 feet to the inch with contour intervals that clearly show the character of the land and land uses within 1,500 feet of the solid waste disposal unit(s). **Rule 909(1)**	
2. The following specific information: **Rule 909(2)**	
a. A legal description of the property included in the application.	
b. Proposed solid waste disposal units.	
c. Structures on the site.	
d. Existing and proposed utilities.	
e. Borrow areas.	
f. Surface waters, wetland, or floodplains.	

Description of Item	Location of Documents
g. Special drainage devices, if necessary.	
h. On-site roads.	
i. Public access roads.	
j. Fencing and other means of controlling access.	
k. The location of all residences.	
F. Engineering plans and engineering reports for a landfill that meet the following requirements: Rule 902(1)(g) and Rule 910	
1. Details of the following: **Rule 910(1)(a)**	
a. Soils underlying each liner system including information on: **Rule 910(1)(a)** and **Rule 910(2)**	
(1) A settlement analysis estimating total and differential settlement including immediate settlement, primary consolidation, and secondary consolidation based on maximum loading. **Rule 910(2)(a**)	
(2) A slope stability study. **Rule 910(2)(b)**	
(3) A performance analysis under varying groundwater conditions. **Rule 910(2)(c)**	
(4) Calculations that show the potential for bottom heave or blowout. **Rule 910(2)(d)**	
b. Compacted soil liners or natural soil that is used in place of a compacted liner including information on: **Rule 910(1)(b)** and **Rule 910(3)**	
(1) The location and thickness of soils to be used for the compacted or natural soil liner.	
(2) Copies of well boring logs documenting soil deposits.	
(3) Data documenting soil source classification, and permeability's including the locations of the tests performed (horizontal and vertical).	
(4) For compacted liners, calculations which show the volume of the source.	

Description of Item	Location of Documents
c. Bentonite geocomposites or flexible membrane liners that includes the following information: **Rule 910(1)(c)** and **Rule 910(4)**	
(1) The methods of storage, handling, and installation including any written instructions from the manufacturer, and quality control procedures.	
(2) The physical specifications of the liner material.	
(3) The ability of the liner material and scrim material, where application, to maintain physical properties under varying conditions of temperature, pH, ultraviolet radiation, biological attack, and prolong leachate throughout the operating and post-closure life of the landfill.	
d. Primary leachate collection and removal systems that includes the following information: **Rule 910(1)(d)** and **Rule 910(5)**	
(1) Specifications for the material to be used for the leachate collection system. **Rule 910(5)(a)**	
(2) The design of the collection pipe including the following: **Rule 910(5)(a)**	
(a) Diameter.	
(b) Perforations.	
(c) Slope.	
(d) Spacing.	
(e) Leachate compatibility.	
(f) Structural integrity under static and dynamic loading.	
(3) Design features that allow cleaning of drainage pipes. **Rule 910(5)(c)**	
(4) Procedures to prevent clogging during construction and operation. **Rule 910(5)(d)**	
(5) Calculations to show that the leachate head will be one foot or less above the liner at any point in the system except the sump. **Rule 910(5)(e)**	

Description of Item	Location of Documents
(6) Provisions to remove obstructions from the system. **Rule 910(5)(f)**	
(7) Calculations to determine the anticipated volume of the leachate collected. **Rule 910(5)(g)**	
(8) Information on the proposed methods of disposal for the leachate collected. **Rule 910(5)(h)**	
e. Secondary leachate collection or leak detection systems that includes the following information: **Rule 910(1)(e)** and **Rule 910(6)**	
(1) The design of the secondary collection system shall include the information required under **Rule 910(5):**	
(a) Specifications for the material to be used for the leachate collection system. **Rule 910(6)(a)** and **Rule 910(5)(a)**	
(b) The design of the collection pipe including the following: **Rule 910(5)(a)**	
(i) Diameter.	
(ii) Perforations.	
(iii) Slope.	
(iv) Spacing.	
(v) Leachate compatibility.	
(vi) Structural integrity under static and dynamic loading.	
(c) Design features that allow cleaning of drainage pipes. **Rule 910(5)(c)**	
(d) Procedures to prevent clogging during construction and operation. **Rule 910(5)(d)**	
(e) Calculations to show that the leachate head will be one foot or less above the liner at any point in the system except the sump. **Rule 910(5)(e)**	
(f) Provisions to remove obstructions from the system. **Rule 910(5)(f)**	

Description of Item	Location of Documents
(g) Calculations to determine the anticipated volume of the leachate collected. **Rule 910(5)(g)**	
(h) Information on the proposed methods of disposal for the leachate collected. **Rule 910(5)(h)**	
(2) The method of detecting, removing, and analyzing leaks that are detected in the system. **Rule 910(6)(a)**	
f. Dewatering systems that includes the following information: **Rule 910(1)(f)** and **Rule 910(7)**	
(1) Design calculations for the drain pipe diameter.	
(2) Design features that allow cleaning.	
(3) Procedures to prevent clogging during construction and operation.	
(4) An evaluation of the structural suitability of underdrain pipe under both static and dynamic loadings.	
g. Information on the control of the following: **Rule 910(1)(g)** and **Rule 910(8)**	
(1) Run-on.	
(2) Run-off.	
(3) Wind dispersal of particulate matter.	
(4) Gas that is generated within the landfill	
h. The final cover as specified in a closure plan that is in compliance with the provisions of R 299.4446 and includes the following: **Rule 910(1)(h)**	
(1) An overall description of the methods, procedures, and processes that will be used to close each unit of the landfill in accordance with R 299.4446.	
(2) An estimate of the maximum extent of operation that will be open at any time during the active life of the landfill.	
(3) An estimate of the maximum inventory of waste ever on-site over the active life of the landfill.	
(4) A description of the final cover, including engineering plans and specifications.	

Description of Item	Location of Documents
(5) A schedule for completing all activities that are necessary to satisfy the final cover requirements of these rules.	
i. Post-closure maintenance and monitoring, as specified in a plan that is in compliance with provisions of R 299.4447 and including the following: **Rule 910(1)(i)**	
(1) A description of the monitoring and maintenance activities that are required for each unit, and the frequency at which these activities will be performed.	
(2) Name, address, and telephone number of the person or office to contact about the facility during the post-closure period.	
(3) A description of the planned uses of the property during the post-closure period.	
2. Engineering plans prepared and sealed by a professional engineer. **Rule 910(9)**	
G. Operation plans which meet the requirements of R 299.4911 by including the following: Rule 902(1)(h)	
1. The following plans that describe how the facility will be operated: **Rule 911(1)**	
a. A fill progression plan over the active life of the landfill including final slopes and elevations and including the location and description of the permanent survey benchmark to be used for elevation control.	
b. A landscape plan that identifies and locates existing vegetation to be retained and proposed vegetation to be used for cover, screening, and other purposes.	
c. Engineering plans that detail leachate collection and removal facilities and, if applicable, that show any systems to be used for leachate recirculation.	
d. An engineering plan that shows gas management systems, if applicable. (If not applicable, indicate “NA”).	

Description of Item	Location of Documents
2. Engineering reports that describe: **Rule 911(2)**	
a. All equipment to be used at the landfill for construction and operation.	
b. The landfill's personnel requirements, including the duties, training, and authority of the responsible individual who is to direct landfill operations.	
c. Access controls to be used including:	
(1) Signs.	
(2) Hours of operation.	
(3) Usage rules.	
(4) Natural and artificial barriers.	
(5) Traffic control.	
d. The methods to be used to control dust and blowing papers from the active fill area.	
e. The methods for disposal of large or bulky items.	
f. The on-site road design and method of controlling fugitive dust.	
g. The methods to control salvaging, if allowed.	
h. The storage locations of, and the design for, white goods and other recyclable materials.	
i. The procedures for separating recyclable materials from general refuse, if applicable.	
j. The type of daily cover to be used and the source, quantity, and method of placement of the cover.	
k. The process for receiving and unloading solid waste including the procedures for inspecting loads for hazardous waste.	
l. The procedures for the receipt and disposal of asbestos waste.	

Description of Item	Location of Documents
H. Construction Quality Assurance Plans that meet the requirements of R 299.4916 by including the following: Rule 902(1)(i)	
1. Method for addressing the following physical components where applicable: **Rule 916(2)**	
a. Foundations.	
b. Dikes.	
c. Low-permeability soil liners.	
d. Flexible membrane liners.	
e. Leachate collection and removal systems and secondary collection systems.	
f. Final cover systems.	
2. Observations, inspections, tests, and measurements that will be used to ensure: **Rule 916(4)**	
a. Structural stability and integrity of the features listed in “H.1.”.	
b. Proper construction of all components of the liners, primary and secondary collection and removal system(s), and final cover system.	
c. Conformity of all materials used with design and other material specifications.	
I. Include Remedial Action Plan in compliance with Part 201 and Part 115 Rules, if landfill facility has been determined to be a source of probable source of groundwater contamination. Rule 902(3)	